

1 **UNITED STATES DISTRICT COURT**2 **DISTRICT OF NEVADA**3  
4 KONAMI GAMING, Inc., a Nevada  
corporation,

5 Plaintiff

6 v.

7 MARKS STUDIOS, LLC d/b/a Gimmie Games,  
8 a Georgia limited liability company,

9 Defendant.

10 2:14-cv-01485-JAD-CWH

11 **Claim-Construction Order**

12 This is a patent-infringement suit over digital slot machines. Konami Gaming, Inc. patented  
13 a game design that added a new twist: instead of the player watching a random assortment of  
14 symbols spin by on the slot's reels, Konami's design displays large clusters of identical symbols to  
15 the player. Konami contends that some of Marks Studios, LLC's games incorporate Konami's  
16 patented design, so it sues Marks for infringing four patents. In addition to disagreeing about how  
17 several of the patents' terms should be construed, the parties dispute whether the term "game  
18 controller" as used in two of the patents is indefinite under 35 U.S.C. § 112(f). Having reviewed the  
19 parties' extensive claim-construction briefs and after a two-day *Markman* hearing, I construe some  
20 terms that need construction, conclude that several others need no construction, and hold that the  
term "game controller" is indefinite here.

21 **Background**22 **A. The field of invention**

23 Konami's patents teach a new concept for playing digital slot machines. When a player sits  
24 down to play slots, he normally sees several columns (or "reels") of symbols displayed on the screen.  
25 These virtual reels mimic the slot machines of old Las Vegas, which displayed symbols to the player

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1 by spinning mechanical wheels that had symbols printed on their outside frame.<sup>1</sup> In the new digital  
2 machines, the player places his bet and pushes a button to start the game.<sup>2</sup> He then watches the  
3 display as a random assortment of symbols spins by on the virtual reels.<sup>3</sup> The reels eventually stop  
4 and, if the symbols on the reels match in a pay line, the player wins.<sup>4</sup>

5 Konami's patents involve a slight variation on this concept. Instead of seeing a random  
6 assortment of symbols while the reels are spinning, the player sees clusters of identical symbols flash  
7 by on the reels. This design is intended to build the player's anticipation: he thinks he has a better  
8 chance of getting a line of matching winning symbols because he sees groups of identical symbols  
9 while the reels are spinning, not a random assortment.<sup>5</sup> Konami contends that having these identical  
10 symbol groups—or “runs” as the patent refers to them—increases the player's excitement and thus  
11 increases the time a player spends in front of its machines.<sup>6</sup>

12 This infringement dispute concerns precisely how Konami's invention operates to select and  
13 display these identical symbol clusters on the slot machine's screen. There appears little dispute that  
14 Marks's games infringe on the generic concept of displaying identical runs of symbols to players  
15 during slot games. The question is whether Marks's games do so in a way that infringes Konami's  
16 patents.

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22 <sup>1</sup> Konami's patents teach a machine with “simulated rotatable reels” using “electronics, computers,  
23 and electronic graphical displays.” '869 Patent, 1:33-523.

24 <sup>2</sup> See ECF No. 129 at 7–10.

25 <sup>3</sup> *Id.*

26 <sup>4</sup> *Id.*

27 <sup>5</sup> *Id.*

28 <sup>6</sup> *Id.*

## B. Konami's invention for displaying identical-symbol runs

Konami obtained four patents on its design, all stemming from the same application and all sharing nearly identical specifications.<sup>7</sup> Konami’s patents teach a digital slot machine that spins “simulated rotatable reels.” The parties extensively dispute precisely how Konami’s invention selects the symbols it displays on these reels. Because the slot machine is a digital display that mimics a real slot machine, obviously the symbols on these reels (as well as the instructions for displaying them) are bits of data stored on the machine’s processor.<sup>8</sup> “Each reel is divided into a given number of elements, for example, 256 elements,” where each element is a position on the simulated reel that will be populated with a symbol.<sup>9</sup>

The reels are divided into two sections of elements (or symbol positions): (1) sections that are designated to contain an assortment of different symbols, and (2) sections that are designated to contain identical clusters of symbols.<sup>10</sup> The patents explain that there is a key difference between these two sections. The symbols that populate the sections of the reel that contain the non-identical symbols are stored in a predefined list;<sup>11</sup> generally, “the sequence of [these] symbols . . . remains fixed for all games played.”<sup>12</sup> But the symbols in the identical-symbol sections of the reel change

<sup>7</sup> The four patents asserted in this case by Konami share essentially identical specifications and are descendants of the same original application, No. 11/299,009, filed December 9, 2005. The patents include: United States Patent Nos. 8,096,869, 8,366,540, 8,616,955, and 8,622,810. The '869 Patent was filed December 9, 2005, and claimed priority to an Australian application filed February 14, 2005. The '540 Patent was filed as a continuation application from the '869 Patent and was filed December 9, 2011. The '955 Patent was filed as a continuation application from the '540 Patent and was filed November 26, 2012. The '810 Patent was filed as a continuation application from the '540 Patent and was filed November 26, 2012.

8 *Id.*

<sup>9</sup>, 869 Patent, 4:16-18, 4:61-63.

10 '869 Patent Cl. 1

<sup>11</sup> The patents state that the reels contain sections populated by symbols that are “fixed for each game played on said gaming machine.” *Id.*

<sup>12</sup> *Id.* at 4:23-25.

1 each game using a process involving “virtually spinning” a “notional, non-visible, inner reel.”<sup>13</sup> In  
 2 practice, this inner reel is a table of different symbols stored on a computer, and spinning this “inner  
 3 reel” involves using some sort of algorithm to select symbols from the table. This “virtual[]”  
 4 spinning” to select the identical symbol is done by a “game controller”—a computer processor with  
 5 memory programmed to carry out the patent’s steps. Before the reels start spinning, the game  
 6 controller selects which symbol to display as the identical-run symbol for that game using the  
 7 “notional, non-visible, inner reel.” The symbol is then populated into the identical-symbol portion of  
 8 the reel, and the reels are displayed to the player on the screen.

9 **C. The claim-construction proceedings**

10 The parties filed extensive claim-construction briefing.<sup>14</sup> I then conducted a two-day  
 11 *Markman* hearing.<sup>15</sup> Both Konami and Marks offered expert testimony related both to their proposed  
 12 constructions and Marks’s indefiniteness challenge.<sup>16</sup> Because the parties had not adequately briefed  
 13 the issue of whether the “game controller” term is indefinite, I ordered and received supplemental  
 14 briefs on this point.<sup>17</sup>

15 **Discussion**

16 I first address whether the “game controller” term is indefinite because the disputed terms in  
 17 the ’810 and ’955 patents depend on “game controller” being valid. Because I conclude that “game  
 18 controller” is indefinite, I do not reach the remaining terms in those two patents. I then offer  
 19 constructions on the remaining disputed terms in the ’869 and ’540 patents.

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<sup>13</sup> *Id.*

<sup>14</sup> ECF Nos. 108, 109. I note that both parties’ briefing was exemplary—and quite helpful.

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<sup>15</sup> ECF Nos. 136, 139.

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<sup>16</sup> *Id.*

<sup>26</sup>

<sup>17</sup> ECF Nos. 138 (order), 140 (Konami’s supplemental brief), and 143 (Marks’s supplemental brief). When Konami filed its supplemental brief on this indefiniteness issue, it also sought to introduce hundreds of pages of new evidence. Marks moved to exclude this evidence, ECF No. 141, and I granted that motion. ECF No. 142 (minute order).

1    **A.    “Game controller” and 35 U.S.C. § 112(f)**

2        35 U.S.C. § 112(f) gives patentees the option of drafting a patent using functional terms  
 3 (what the claimed invention does) instead of implementation terms (how the claimed invention  
 4 operates).<sup>18</sup> Congress enacted § 112(f) to empower patentees to use functional claiming if they can  
 5 ensure that the public knows how that function can be accomplished.<sup>19</sup> So when a patentee uses  
 6 functional language in a patent, he must also disclose in the specification what structure, or which  
 7 devices, can be used to carry out the function. A classic example of functional claiming is the term  
 8 “a means for fastening,” which would allow a patent to cover various ways for fastening (e.g., using  
 9 glue, using bolts) without having to list them all out. Determining whether § 112(f) applies is a two-  
 10 step process: (1) the court decides whether a term is functional; if it is, then (2) the court must  
 11 determine if the patentee has satisfied § 112(f) by sufficiently describing “the structure, material, or  
 12 acts” to perform the function. If a patentee uses a functional term without sufficiently disclosing the  
 13 structure, the term is indefinite and cannot be enforced in an infringement action.

14        **1.    *Is “game controller” a functional term?***

15        Whether a patentee is using functional language that triggers § 112(f)’s structure-disclosure  
 16 obligation is not always apparent. Using the word “means” in the claim language is a recognized  
 17 clue. But the term “means” is not in Konami’s claim language, so I must start with the presumption  
 18 that the term is not functional and that § 112(f)’s requirements do not apply.

19        This presumption was once believed to be “a strong one that [was] not readily overcome.”<sup>20</sup>  
 20 But two years ago, the Federal Circuit held in *Williamson v. Citrix Online* that this “heightened

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22        <sup>18</sup> See 35 U.S.C. § 112(f).

23        <sup>19</sup> See Brad A. Schepers, *Interpretation of Patent Process Claims in Light of the Narrowing Effect of*  
 24 *35 U.S.C. § 112(6)*, 31 Ind. L. Rev. 1133, 1134, 1139 (1998) (noting that the means-test limitation  
 25 was enacted in response to *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946), which  
 26 held that functional claims needed to be “full, clear, and exact” because functional claims “join old  
 and well-known devices with the declared object of achieving new result” and thus “easily lend  
 themselves to abuse.”).

27        <sup>20</sup> See *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004),  
 28 *overruled by Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

1 burden is unjustified” and that there was no reason to “characteriz[e] that presumption as strong.”<sup>21</sup>  
 2 Now, courts must simply ask whether “the words of the claim are understood by persons of ordinary  
 3 skill in the art to have a sufficiently definite meaning as the name for structure.”<sup>22</sup> If the patentee  
 4 claims a function without fairly telling the public what sort of structure can be used to carry out that  
 5 function—regardless of whether the word “means” appears in the claim—the patentee must satisfy §  
 6 112(f)’s disclosure requirement.<sup>23</sup>

7 Determining whether a term is functional can be particularly difficult when the term is a  
 8 computer-implemented one, such as a processor programed to carry out a task. On one hand,  
 9 “processor” evokes a physical device. On the other, if the patentee is in effect claiming the  
 10 *programming* on that processor, the term may trigger § 112(f) because it would be the same as  
 11 claiming “a programming means” for carrying out a computer function.

12 Whether Konami’s term “game controller” is functional is answered by *Williamson*. In  
 13 *Williamson*, the Federal Circuit addressed the similar processor-related term “distributed learning  
 14 control module.”<sup>24</sup> Although the patent did not include the word “means,” the court held that the  
 15 term “control module” triggered § 112(f) because it merely claimed a generic processor for carrying  
 16 out computer functions, not a specific processor structure.<sup>25</sup>

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 18 <sup>21</sup> *Williamson*, 792 F.3d at 1349.

19 <sup>22</sup> *Id.*

20 <sup>23</sup> *Williamson*, 792 F.3d at 1347–53 (“the challenger [must] demonstrate that the claim term fails to  
 21 ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for  
 22 performing that function’” to trigger § 112(f)). Many of the cases Konami relies on are pre-  
 23 *Williamson* and applied a higher standard for rebutting the presumption than I must apply now.  
 24 Since *Williamson*, district courts have generally been more apt to find that terms—including terms  
 25 similar to “game controller”—are functional terms that trigger § 112(f)’s disclosure requirements.  
 See Shong Yin, *Williamson v. Citrix Online: A Fundamental Shift and Return to Form in  
 Means-Plus-Function Interpretation*, 31 Berkeley Tech. L.J. 687, 707 (2016) (collecting the post-  
 26 *Williamson* decisions that have addressed non-means terms and concluding that courts are now much  
 more likely to hold that non-means terms trigger § 112(f)).

27 <sup>24</sup> *Williamson*, 792 F.3d at 1347–53.

28 <sup>25</sup> *Id.*

1       The *Williamson* court first found persuasive the fact that “control module” was drafted in the  
 2 “same format” as a traditional means-plus-function claim.<sup>26</sup> The court pointed out that “distributed  
 3 learning control module” could easily be replaced with the word “means” because the patent taught  
 4 that the module simply performs several functions.<sup>27</sup> In other words, the term set forth “the same  
 5 black box without recitation of structure for providing the same specified function as did ‘means.’”<sup>28</sup>

6       The court also emphasized that “control module” referred to a generic processor and that  
 7 there was little in the patent explaining how this processor operated or interacted with other parts of  
 8 the invention that might lend additional structure. It acknowledged that “control module” referred to  
 9 some sort of processor programmed to carry out computer functions, so it did generally refer to some  
 10 sort of generic structure.<sup>29</sup> And the patent contained some limited information about the processor’s  
 11 operation and the functions it performed: the written description “described in a certain level of  
 12 detail” how the control module worked<sup>30</sup> and explained that the module “controlled the interactions  
 13 between the other [devices] and the various presenter and audience computer systems” and  
 14 “authenticat[ed] the presenter.”<sup>31</sup> But the *Williamson* court still found this level of detail insufficient  
 15 to “inform the structural character of the limitation-in-question or otherwise impart structure to the  
 16 term.”<sup>32</sup>

17       It was also unmoved by the plaintiff’s expert, who testified that this module was a well-  
 18 known structure in the field and that “one of ordinary skill in the art, reading the specification,  
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21       <sup>26</sup> *Id.*

22       <sup>27</sup> *Id.* at 1350.

23       <sup>28</sup> *Id.*

25       <sup>29</sup> *Id.* at 1351.

26       <sup>30</sup> *Id.*

27       <sup>31</sup> *Id.*

28       <sup>32</sup> *Id.*

1 []would know exactly how to program a computer to perform the recited functions.”<sup>33</sup> At bottom,  
 2 the *Williamson* court found, the patent did not disclose sufficient structure for a specific processor:  
 3 the claim term set forth “the same black box without recitation of structure for providing the same  
 4 specified function as did ‘means.’”<sup>34</sup>

5 Like the patents in *Williamson*, Konami’s ’810 and ’955 patents use the term “game  
 6 controller” within claim language structured as a means-plus-function claim: “a game controller  
 7 *configured to* initiate the instance of the game”; “the game controller being further *configured to*  
 8 replace each of the symbols.”<sup>35</sup> Replacing “game controller” with “computer means” leaves us with  
 9 a “black box” term for carrying out processing functions without any definite structure.<sup>36</sup> Like  
 10 “control module” in *Williamson*, “game controller” refers to nothing more than a generic processor  
 11 for carrying out computer functions.<sup>37</sup> Konami acknowledged in its briefing that “game controller”  
 12 corresponds to the “control module” in the patents’ description and that this module includes “a

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 15<sup>33</sup> *Id.* at 1351.

16<sup>34</sup> *Id.*

17<sup>35</sup> ’955 Patent, Cl. 1.

18<sup>36</sup> *Williamson*, 792 F.3d at 1349; *see also Farstone Tech., Inc. v. Apple Inc.*, 2015 WL 5898273, at  
 19 \*3 (C.D. Cal. Oct. 8, 2015) (“The limitation replaces ‘means’ with ‘module’ and recites the function  
 20 performed by the ‘backup/recovery module.’”); *Voice Domain Techs., LLC v. Apple Inc.*, 2015 WL  
 21 4638577, at \*7 (D. Mass. Aug. 4, 2015) (“This format is consistent with traditional means-plus-  
 22 function claim limitations, because it replaces the word ‘means’ with ‘mechanism,’ and recites a  
 23 function to be performed by the ‘coupling mechanism.’”). This conclusion is bolstered by the  
 24 patents’ use of the term “configured.” *See Zeroclick, LLC v. Apple Inc.*, 2016 WL 5477115, at \*4  
 25 (N.D. Cal. Aug. 16, 2016) (finding “user interface code being configured to . . .” to be a means-  
 26 plus-function limitation) (emphasis added); *Verint Sys. Inc. v. Red Box Recorders Ltd.*, 166 F. Supp.  
 27 3d 364, 384 (S.D.N.Y. 2016).

28<sup>37</sup> Although “module” may be even more generic (and have a richer history of use as a nonce word in  
 patent law) than “controller,” I am not persuaded that “distributed learning control module” is any  
 more or less generic than “game controller.” The Federal Circuit was recently faced with a similar  
 issue when reviewing the term “data processor”—a term the lower court held triggered means-plus-  
 function requirements. *VocalTag Ltd. v. Agis Automatisering B.V.*, 659 F. App’x 616, 619–20 (Fed.  
 Cir. 2016). But the Federal Circuit avoided addressing this issue because the parties did not raise it  
 on appeal. *Id.*

1 microprocessor, a working memory and a data storage device connection means.”<sup>38</sup> Konami’s  
 2 expert, Mr. Acres, offered his opinion that “the term ‘game controller’ was widely used to refer to a  
 3 processor and memory subsystem.”<sup>39</sup> Acres left no doubt that a “game controller” refers to  
 4 programmable processors generally and that a person in the relevant field would not associate the  
 5 term with any specific processor or software.<sup>40</sup>

6 *Williamson* did leave open the possibility that other language in a patent can, in some cases,  
 7 put enough flesh on a generic processor’s bones to make it a specific processor structure that avoids  
 8 § 112(f)’s strictures.<sup>41</sup> But like the patents in *Williamson*, Konami’s patents disclose little to no  
 9 information about how the “game controller” operates or how it interacts with other parts of the  
 10 invention that might otherwise disclose sufficient structure. The patents provide a list of functions  
 11 for the game controller: it “predetermines” which symbol will display on the slot’s pay line; it “pre-  
 12 selects” certain elements on the reel; it “determines the identical symbol to be displayed”; and it is  
 13 “configured to” “initiate” a game by “using reels” at “game speed,” “randomly select” a symbol, and  
 14 “replace” certain symbols.<sup>42</sup> But the patents shed no light on how these functions are carried out. Do  
 15 the selection processes occur within the game controller? Does the game controller interact with  
 16 another device? The patents refer to a “notional, non-visible reel” that is used to select symbols, but  
 17 there is little in the patents’ claims or specification about what this inner reel is or how the game

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 20 <sup>38</sup> ECF No. 129 at 15.

21 <sup>39</sup> ECF No. 133-1 at ¶ 9. Mr. Crevelt, Marks’s expert, also opined that “a person of ordinary skill  
 22 would understand that any programmable computer device could meet this description.” ECF No.  
 23 130-3 at ¶ 53.

24 <sup>40</sup> *Id.* Acres explains that, at the time of the patent, several different operating systems and  
 25 programming languages were used in gaming machines.

26 <sup>41</sup> *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014) (holding that when deciding  
 27 whether the means test is triggered, the question is whether “in view of the specification, prosecution  
 history, etc.,” the patent “still provide[s] sufficient structure such that the presumption against  
 means-plus-function claiming remains intact”).

28 <sup>42</sup>See, e.g., ’869 Patent, Cl. 1; ’810 Patent, Cl. 1.

1 controller interacts with it.<sup>43</sup> How does the game controller “initiate” games” using reels”? Does  
 2 “initiating” the game mean sending signals to the display? The game controller must initiate a play  
 3 of the game “using the reel during which the reel is spun at a game speed”; does the game controller  
 4 contain programming for spinning the reel at game speed? Does it communicate with another device  
 5 to get that information?<sup>44</sup>

6 Lower courts have applied *Williamson* to similar black-box processor terms and found  
 7 § 112(f) triggered.<sup>45</sup> A court in the District of Arizona held that a “processor for associating the  
 8 content data with dispatch record data” was sufficient because it did “not convey to a skilled artisan

10 <sup>43</sup> The patents’ claim language simply say that this notional reel is used to select symbols, and the  
 11 specification and prosecution history shed little light on how this is done. The specifications refer to  
 12 a lookup table, but there is no disclosure as to how the game controller uses a lookup table to select  
 symbols.

13 <sup>44</sup> *Williamson*, 792 F.3d at 1349. Some courts have noted as a potential exception a patent whose  
 14 functions require an out-of-the-box processor with no programming whatsoever. But even those  
 15 courts do not hold that claiming a generic process is enough if special programming would be  
 16 required to carry out the patent’s functions. For example, a patent that claimed a processor that  
 17 needed to “determine” whether to activate another circuit triggered § 112(f) because there was no  
 18 information in the patent about how the processor made this determination—and “determining”  
 19 whether to activate a circuit would require additional programming, not just any off-the-shelf  
 20 processor. *See Velocity Patent LLC v. Mercedes-Benz USA, LLC*, 2016 WL 5234110, at \*6 (N.D. Ill.  
 21 Sept. 21, 2016). Konami’s patents cannot claim this exception because the game controller must  
 22 perform several specialized functions like “determining” which symbols to display and “initiating”  
 23 reels spinning on displays—each of which requires special programming. Marks’s expert testified  
 24 that to implement the patents, software must be specifically designed to meet the specifications. ECF  
 25 No. 139 at 8–9. The patents also state that the controller requires “program code” to “driv[e] any of  
 26 the described embodiments” and that the controller must “implement appropriate elements of the  
 27 program code.” *See, e.g.*, ’869 Patent.

28 <sup>45</sup> Some courts have pointed out that using black-box processor terms triggers the longstanding case  
 law addressing computer-implemented software claims, which typically triggers the means-plus-  
 function analysis. *Verint Sys. Inc.*, 166 F. Supp. 3d at 379–80 (holding that a “computer application”  
 used to carry out functions was not a sufficient structure to avoid § 112(f), and noting that “in many  
 of the Federal Circuit cases interpreting ‘computer- implemented means-plus-function claims’ the  
 court understood the means claimed to be software executed by a computer. . . . The fact that the  
 ‘means for’ language was already understood by the court to implicitly refer to a sub-class of  
 [112(f)] claims composed of two structural elements—programs executed by a  
 microprocessor—makes clear that explicitly claiming a ‘computer application’ does not add  
 sufficiently definite structure”).

1 anything about the internal components, structure, or specific operation of the processor.”<sup>46</sup>  
 2 Similarly, a Northern District of California court recently held that a “program that can operate the  
 3 movement of the pointer” triggered § 112(f) because simply stating that a program will carry out a  
 4 function does not disclose *how* it will do so (i.e., how the software will be programmed).<sup>47</sup> Section  
 5 112(f) was also triggered when a patentee simply claimed a processor configured to carry out a  
 6 couple of abstract functions, such as identifying a device, without including any specifics about how  
 7 those operations were to be carried out or how it interacted with other parts of the invention.<sup>48</sup>

8 Konami cites a handful of cases holding that § 112(f) did not apply to processor-related  
 9 claims, but they are unhelpful because the patents in those cases had additional information about  
 10 how the processor operated and interacted with other parts of the device, thus disclosing sufficient  
 11 structure. For example, in *Uniloc v. Autodesk*, the court found that a claim for a processor did not  
 12 trigger the means test because the patent described precisely how the processor operated in  
 13 conjunction with other parts of the invention: it inserted certain symbols into a drawing created by  
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 16 <sup>46</sup> *GoDaddy.com, LLC v. RPost Commc’ns Ltd.*, 2016 WL 212676, at \*56–57 (D. Ariz. Jan. 19,  
 17 2016).

18 <sup>47</sup> *Zeroclick, LLC v. Apple Inc.*, 2016 WL 5477115, at \*4 (N.D. Cal. Aug. 16, 2016).

19 <sup>48</sup> *St. Isidore Research, LLC v. Comerica Inc.*, 2016 WL 4988246, at \*14 (E.D. Tex. Sept. 19, 2016).  
 20 *St. Isidore Research* is often distinguished by other Eastern District of Texas cases on the basis that  
 21 the patent in that case did not disclose any information about how the processor worked or how it  
 22 interacted with other parts of the invention. *See also Mobilemedia Ideas, LLC v. Apple Inc.*, 178 F.  
 23 Supp. 3d 209, 218 (D. Del. 2016) (“Accordingly, the limitation is defined by its function, i.e., a  
 24 generator used to generate an alert sound. The court concludes that the limitation is subject to § 112,  
 25 ¶ 6, with a function ‘generating the alert sound when the call is received from the remote caller.’”);  
 26 *Farstone Tech., Inc. v. Apple Inc.*, 2015 WL 5898273, at \*3 (C.D. Cal. Oct. 8, 2015), aff’d, 2016 WL  
 27 4373676 (Fed. Cir. Aug. 16, 2016) (“Although the specification describes the ‘backup/recovery  
 28 module’ as within the hardware resource of the processing system, the specification fails to impart  
 any structural significance to the term.”); *Voice Domain Techs., LLC v. Apple Inc.*, 2015 WL  
 4638577, at \*7 (D. Mass. Aug. 4, 2015) (“[C]oupling mechanism for providing said microphone  
 signal, said command notification signal, said data notification signal and said cursor signal to said  
 processing system’ . . . is ‘consistent with traditional means-plus-function claim limitations,’ because  
 it replaces the word ‘means with ‘mechanism,’ and recites a function to be performed by the  
 ‘coupling mechanism.’”).

1 another device, transmitted specific data to a specific database, and generated a specified data sheet.<sup>49</sup>  
 2 “[T]he claim [thus] itself connote[d] the structural nature of the [processor] by describing” in careful  
 3 detail how it “operate[d] within the claimed invention.”<sup>50</sup> Similarly, in *Smartflash LLC v. Apple Inc.*,  
 4 the claims recited how the processor connected with other claim limitations, thus disclosing some  
 5 structure, not just a generic processor.<sup>51</sup>

6 Konami’s patents teach a processor that performs computer functions like “initiating” a game  
 7 and “determining” symbols, but they provide no information about how that processor is  
 8 programmed to carry out these functions or how it is configured to interact with other parts of the  
 9 machine to operate. And that is exactly the sort of “black box” means claiming that *Williamson*

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12 <sup>49</sup> *Uniloc USA, Inc. v. Autodesk, Inc.*, 2016 WL 3647977, at \*6 (E.D. Tex. July 7, 2016).  
 13 A few district courts have suggested that claiming a processor automatically discloses a structure  
 14 because, by definition, a processor is a physical structure. *See Odyssey Wireless, Inc. v. Apple Inc.*,  
 15 2016 WL 3055900, at \*11 (S.D. Cal. Mar. 30, 2016) (“The term ‘processor’ connotes structure.”).  
 16 To the extent these courts hold that this is a *per se* rule, I disagree. To be sure, the word “processor”  
 17 refers to a physical item we can hold in our hands. But so does “a fastener” and a “device”—terms  
 18 that the Federal Circuit has repeatedly held triggers the means-plus-function test. The Federal  
 19 Circuit did not set the standard as whether a patent term connotes *any* structure; the standard is  
 whether the patent connotes “sufficient” structure in the context of a given patent. Whether claiming  
 a processor will trigger the means test will turn on the specific facts of each patent. By the same  
 token, I therefore also disagree with Marks that *Williamson* holds that any “descriptions of software  
 that perform a specific function should receive means-plus treatment.” ECF No. 143 at 3.

20 <sup>50</sup> *Id.*; *see also Advanced Mktg. Sys., LLC v. CVS Pharm., Inc.*, 2016 WL 1741396 (E.D. Tex. May 3,  
 21 2016) (noting that the “claims at issue provide further evidence of structure by describing physical  
 22 connections between the data processor and other claimed elements” and that “the claims and  
 specification describe how the data processor accomplishes the claimed functions”).

23 <sup>51</sup> 77 F. Supp. 3d 535, 545 (E.D. Tex. 2014); *see also Cellular Commc’ns Equip. LLC v. AT&T, Inc.*,  
 24 2016 WL 7364266, at \*16 (E.D. Tex. Dec. 19, 2016). Notably, *Williamson* lessened the standard for  
 25 triggering means-plus-function analysis, but in reality, it returned the standard to what it was prior to  
 its decision in the early 2000’s that raised it in the first place. Thus, older cases are also relevant to  
 26 determining when the means-plus-function test is triggered. And when it comes to processor claims,  
 the older cases draw the same line between patents that disclose enough details about how the  
 27 processor operates and interacts with other parts of the invention, and those that do not—and are  
 therefore indefinite. *See, e.g., Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320  
 (Fed. Cir. 2004) (noting that the generic term “circuit” was coupled with enough detail about how  
 28 the circuit operated to inform a reasonable person in the art about the circuit’s structure).

1 warned of.<sup>52</sup> The '810 and '955 patents therefore use “game controller” as a nonce term to mean a  
 2 “computer means” of carrying out computer-implemented functions, not as a term denoting a  
 3 sufficient existing structure. This functional language triggers § 112(f)’s structure-disclosure  
 4 obligation.

5 **2. Do Konami’s patents disclose an adequate structure for the game controller?**

6 With the means test triggered, I must next determine whether Konami satisfied § 112(f) by  
 7 sufficiently describing “the structure, material, or acts” to perform the function. If not, the term is  
 8 too indefinite and cannot be enforced.<sup>53</sup> I apply § 112(f)’s test in two steps. I “must first identify the  
 9 claimed function.”<sup>54</sup> I then “determine what structure, if any, disclosed in the specification  
 10 corresponds to the claimed function.”<sup>55</sup> “If the patentee fails to disclose adequate corresponding  
 11 structure, the claim is indefinite.”<sup>56</sup> I must construe the “means” to include only the “corresponding  
 12 structure, material or acts described in the patent specification” and their “equivalents.”<sup>57</sup> If the  
 13 patent’s specification does not link a given structure to the relevant function, that structure cannot be  
 14 part of the patentee’s claims.<sup>58</sup>

15 When a means term is a computer-implemented one, the patent must disclose “an algorithm  
 16 to perform the function.”<sup>59</sup> This need not be computer code, but there must at least be a “step by step

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18 <sup>52</sup> At least one other case has held that the term “controller” can trigger § 112(f). *See MonkeyMedia, Inc. v. Apple, Inc.*, 2013 WL 12076550, at \*4 (W.D. Tex. Feb. 22, 2013).

19 <sup>53</sup> *Williamson*, 792 F.3d at 1352.

21 <sup>54</sup> *Id.*

22 <sup>55</sup> *Id.*

23 <sup>56</sup> *Id.* at 1352.

24 <sup>57</sup> 35 U.S.C. § 112.

25 <sup>58</sup> *Serrano*, 111 F.3d at 1583.

26 <sup>59</sup> *EON Corp. IP Holdings LLC v. AT&T Mobility LLC*, 785 F.3d 616, 623 (Fed. Cir. 2015); *Cloud*  
 27 *Farm Assocs. LP v. Volkswagen Grp. of Am., Inc.*, 2017 WL 74768, at \*7 (Fed. Cir. Jan. 9, 2017);  
 28 *Aristocrat Techs. Austl. Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008); *WMS*  
*Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339 (Fed. Cir. 1999).

1 procedure” for setting up the processor.<sup>60</sup> Merely describing the functions the processor carries out,  
 2 in different ways, is not enough.<sup>61</sup> “Whether the disclosure would enable one of ordinary skill in the  
 3 art to make and use the invention is not” the question, instead, I must ask whether the “patent  
 4 discloses structure that is used to perform the claimed function.”<sup>62</sup>

5 The ’810 and ’955 patents do not sufficiently disclose the “game controller” structure. They  
 6 disclose no algorithm,<sup>63</sup> they offer no step-by-step procedure explaining how the game controller  
 7 should be programmed, and the language in the patents that Konami points to<sup>64</sup> is simply a  
 8 description of certain functions, not a disclosure for programming the game controller. “In other  
 9 words, the patent offers the ends but not the means, which is not sufficient for structure.”<sup>65</sup>

10 Konami urges that there is enough information in the patents for a person in the art to figure  
 11 out how to program a processor to carry out the functions. But the *Williamson* court held that “the  
 12 fact that one of skill in the art could program a computer to perform the recited functions cannot  
 13 create structure where none otherwise is disclosed.”<sup>66</sup> The test is whether the patent actually  
 14 “discloses” an algorithm or its equivalent, not whether a person in the art, armed with his own  
 15 knowledge of how to program a processor, could figure it out.<sup>67</sup>

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16  
 17 <sup>60</sup> *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1365 (Fed. Cir. 2012).

18  
 19 <sup>61</sup> *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1317 (Fed. Cir. 2012) (“This type of purely functional  
 language, which simply restates the function associated with the means-plus-function limitation, is  
 insufficient to provide the required corresponding structure.”).

20 <sup>62</sup> *Aristocrat Techs.*, 521 F.3d at 1337.

21 <sup>63</sup> The expert evidence confirmed that “the code itself is not in the Patent.” See ECF No. 139 at 8–9.

22 <sup>64</sup> See ECF No. 140 at 9 (noting that the patent specifies some of the game controller’s functions); *id.*  
 23 at 10 (discussing the symbol-replacement function and arguing that a person of ordinary skill in the  
 24 art would know how to program the processor to carry out this function).

25 <sup>65</sup> *Cloud Farm Assocs. LP*, 2017 WL 74768, at \*7.

26 <sup>66</sup> *Williamson*, 792 F.3d at 1351.

27 <sup>67</sup> *Aristocrat Techs.*, 521 F.3d at 1337 (“Aristocrat was not required to produce a listing of source  
 28 code or a highly detailed description of the algorithm to be used to achieve the claimed functions in  
 order to satisfy 35 U.S.C. § 112 ¶ 6. It was required, however, to at least disclose the algorithm that

1 Enforcement of Konami's '810 and '955 patents is dependent on the "game controller" term.  
 2 Because this term is too indefinite to permit Konami to enforce these patents, I do not reach the  
 3 remaining arguments about the '810 and '955 patents.<sup>68</sup>

4 **B. Claim constructions for the terms in Konami's '869 and '540 patents**

5 Deciding whether a defendant has infringed a patent is a two-step process. First, I must  
 6 construe the patent's claims and "determin[e] the[ir] meaning and scope."<sup>69</sup> With the meaning and  
 7 scope of the patent defined, it is then up to the fact-finder to decide whether the defendant  
 8 infringed.<sup>70</sup>

9 When construing a patent's claims, I give words their ordinary and customary meaning—the  
 10 meaning they would have to a person of ordinary skill in the art after reviewing the intrinsic record at  
 11 the time of the invention.<sup>71</sup> "In some cases, the ordinary meaning of claim language . . . may be  
 12 readily apparent even to lay judges, and claim construction in such cases involves little more than the  
 13 application of the widely accepted meaning of commonly understood words."<sup>72</sup> But even if a term's  
 14 meaning appears obvious, I may still be called on to construe that term. This is because when the

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15  
 16 transforms the general purpose microprocessor to a 'special purpose computer programmed to  
 17 perform the disclosed algorithm.'").

18 <sup>68</sup> This includes the terms "associated symbol"; "game speed"; "instance of a game"; and "while the  
 19 reel is spinning." Konami also raises a takings argument for the first time in a footnote in its  
 20 supplemental briefing. *See* ECF No. 140 at 2, n.1. I decline to address an argument not merely  
 21 missing from Konami's initial claim-construction briefing, but contained only in a footnote in a  
 22 supplemental brief that I narrowly confined to other topics. Konami waived this argument by not  
 23 raising it during the extensive briefing period or during the *Markman* hearing. In any event, judicial  
 24 decisions generally apply retroactively without running afoul of the Takings Clause. *See Rivers v.*  
*Roadway Express*, 511 U.S. 298, 311–12 (1994).

25 <sup>69</sup> *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008)  
 26 (citation omitted); *see also Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir.  
 27 1995) ("[T]he court has the power and obligation to construe as a matter of law the meaning of  
 28 language used in the patent claim.").

<sup>70</sup> *Markman*, 52 F.3d at 979.

<sup>71</sup> *Id.*

<sup>72</sup> *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005).

1 parties dispute the scope of a claim term, it is my job—not the fact-finder’s—to settle that dispute.<sup>73</sup>  
 2 “A determination that a claim term ‘needs no construction’ or has the ‘plain and ordinary meaning’  
 3 may be inadequate . . . when reliance on a term’s ‘ordinary’ meaning does not resolve the parties’  
 4 dispute.”<sup>74</sup>

5 The “claim construction analysis must begin and remain centered on the claim language  
 6 itself, for that is the language that the patentee has chosen to particularly point out.”<sup>75</sup> “[T]he claims  
 7 themselves provide substantial guidance as to the meaning of particular claim terms.”<sup>76</sup> But “[o]ther  
 8 claims of the patent in question, both asserted and unasserted, can also be valuable sources of  
 9 enlightenment as to the meaning of a claim term.”<sup>77</sup> If the claim language is ambiguous, I may  
 10 consider other sources like “the specification, the prosecution history, and extrinsic evidence  
 11 concerning relevant scientific principles, the meaning of technical terms, and the state of the art.”<sup>78</sup>

12 When a patentee describes a preferred embodiment in the specification, this embodiment may  
 13 help shed light on the meaning of the patent’s claim language.<sup>79</sup> But these embodiments generally  
 14 should not be imported into the claims as limitations.<sup>80</sup> “There are only two exceptions to this  
 15 general rule: (1) when a patentee sets out a definition and acts as his own lexicographer, or (2) when  
 16

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17 <sup>73</sup> *O2 Micro Int’l Ltd.*, 521 F.3d at 1362.

18 <sup>74</sup> *Id.*; see also *AFG Indus., Inc. v. Cardinal IG Co.*, 239 F.3d 1239, 1247 (Fed. Cir. 2001) (“It is  
 19 critical for trial courts to set forth an express construction of the material claim terms in dispute.”);  
 20 *Sulzer Textil A.G. v. Picanol N.V.*, 358 F.3d 1356, 1366 (Fed. Cir. 2004) (“[T]he district court must  
 21 instruct the jury on the meanings to be attributed to all disputed terms used in the claims in suit so  
 22 that the jury will be able to ‘intelligently determine the questions presented.’”(citation omitted)).

23 <sup>75</sup> *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)  
 24 (quotation omitted).

25 <sup>76</sup> *Phillips*, 415 F.3d at 1312–13.

26 <sup>77</sup> *Id.*

27 <sup>78</sup> *Id.*

28 <sup>79</sup> *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1369 (Fed. Cir. 2012).

<sup>80</sup> *Id.* (“We do not read limitations from the specification into claims.”).

1 the patentee disavows the full scope of the claim term either in the specification or during  
 2 prosecution.”<sup>81</sup>

3 The parties dispute the meaning of seven claim terms related to how Konami’s invention  
 4 selects symbols for the reels and how those symbols are displayed to the player:

- 5 1. “*Fixed symbols*”<sup>82</sup>
- 6 2. “*Notional, non-visible reel*”<sup>83</sup>
- 7 3. “*Virtual rotation*”<sup>84</sup>
- 8 4. “*Play of the game*”<sup>85</sup>
- 9 5. “*Replace*”<sup>86</sup>
- 10 6. “*Subset*”<sup>87</sup>
- 11 7. “*Symbol containing elements*”<sup>88</sup>

12 I find that several of these terms need no construction beyond their plain meaning. For the others, I  
 13 provide constructions.

14 **1. “*Fixed symbols*”**

15 Marks proposes that I construe “fixed symbol” to mean “symbols whose position in a data  
 16 structure representing a reel and on the display are predetermined and remain constant.”

17 Konami asks that I provide no construction and let the jury decide infringement based on the claim  
 18 language as written.

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19  
 20 <sup>81</sup> *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

21 <sup>82</sup> ’869 Patent, Cl. 19; ’540 Patent, Cl. 22; ’869 Patent, Cl. 1.

22 <sup>83</sup> ’869 Patent, Cl. 1, and 19; ’540 Patent, Cl. 7, 23,

23 <sup>84</sup> ’869 Patent, Cl. 1, and 19; ’540 Patent, Cl. 7 and 23.

24 <sup>85</sup> ’869 Patent, Cl. 1, and 19; ’540 Patent, Cl. 1, and 21.

25 <sup>86</sup> ’540 Patent, Cl. 1, and 21.

26 <sup>87</sup> ’869 Patent, Cl. 1, 2, 3, and 19; ’540 Patent, Cl. 2, 3, 7, and 23.

27 <sup>88</sup> ’869 Patent, Cl. 1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 16, 19, 20, 22, and 23; ’540 Patent, Cl. 1, 4, 5, 9, 10,  
 28 11, 12, 14, 21, 22, 26, and 27.

1       Where a patent's language is "readily apparent even to lay judges" like me,<sup>89</sup> added  
 2 constructions can do more harm than good. Courts need not construe every term with an "ordinary  
 3 meaning, lest [they] be inundated with requests to parse the meaning of every word in the asserted  
 4 claims."<sup>90</sup> I find that is the case with this term, and I decline to construe it for several reasons.

5       First, Marks's proffered construction adds more confusion than it alleviates. Neither I nor the  
 6 jury know what a "data structure representing a reel" means within the context of these patents, and  
 7 the patents themselves do not use that language. Nor does the patent indicate that symbols are fixed  
 8 in a data structure and on the display, as Marks proposes. Once those limitations are subtracted,  
 9 Marks is asking that I define "fixed" as "predetermined and remain constant." But that is what the  
 10 word "fixed" means.

11       Second, the patents' terms and the specification do not limit the term "fixed symbols" in the  
 12 way Marks urges. "Fixed symbols" is used in the patents to distinguish between the sections of the  
 13 reels that contain different symbols—which are "fixed"—and sections of the reels that contain the  
 14 identical runs of symbols—which are populated with new symbols via the process laid out in the  
 15 patents. Marks argues that the patents' terms require that the sections of the reels with the non-  
 16 identical symbols never change from game to game—in other words, that the symbols in these  
 17 sections are preprogrammed into the machine and cannot change unless someone physically  
 18 reprograms that machine. But I generally cannot limit the meaning of claim terms using the  
 19 specification,<sup>91</sup> and this term is no exception.

20       The patents use "fixed" as a relative term to distinguish between non-identical symbols and  
 21 identical symbols, and there is no indication in the terms or otherwise that "fixed" means that the  
 22 symbol sequence is permanently programmed into a data structure that "remains constant" in every  
 23 way. For example, the claims appear to cover a machine in which the non-identical symbols are

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 25       <sup>89</sup> *Phillips*, 415 F.3d at 1314.

26       <sup>90</sup> *O2 Micro*, 521 F.3d at 1360; *see also Biotec Biologische Naturverpackungen GmbH & Co. KG v.*  
 27 *Biocorp, Inc.*, 249 F.3d 1341, 1349 (Fed. Cir. 2001) (finding no error in decision not to construe  
 "melting").

28       <sup>91</sup> *Williamson*, 792 F.3d at 1346.

1 chosen by one process, fixed prior to the selection of the identical symbols, and then the identical  
 2 symbols are chosen. In this hypothetical, the symbols would remain “fixed” relative to the identical  
 3 symbols, but their positions could still be changed. This interpretation is supported by the claim  
 4 language, which states that the reels are populated with fixed symbols “for each play” of the game,  
 5 not that the symbols are “fixed for all games ever played on the machine.”<sup>92</sup> Moreover, the patents’  
 6 terms state that the “fixed symbol” sections of the reels can be “modified” to incorporate “identical  
 7 symbols”—which means that the fixed symbols do not necessarily “remain constant” in a “data  
 8 structure” as Marks argues.<sup>93</sup> Similarly, the specifications also indicate that the positions for the  
 9 fixed symbols can change from game to game.<sup>94</sup>

10 Marks also points to statements that Konami made during the patents’ prosecution, but they  
 11 are unhelpful. Konami distinguished prior art by relying on the fact that the simulated reels  
 12 contained fixed and non-fixed elements, but it never took the position that the fixed symbols were  
 13 put into a “predetermined” form of a data structure. Instead, Konami simply pointed out that in its  
 14 invention, the reels are “divided into section which the symbols remain the same . . . and at least one  
 15 selection in which the symbols are identical which is selected” by the process laid out in the patent.<sup>95</sup>

16  
 17 <sup>92</sup> '869 Patent, Cl. 19.

18  
 19 <sup>93</sup> *Id.* at Cl. 22–23.

20  
 21  
 22 <sup>94</sup> Marks relies on language in the specification that states that the fixed symbols are “predetermined and remain constant for each game played on the machine.” But that is a description of one preferred embodiment, not a basis to read limitations into the broader claim language, which states that the fixed symbols are merely fixed “each play”—leaving open the possibility that the claims extend to machines that change the fixed symbols between plays. '540 Patent, Cl. 22.

23  
 24  
 25  
 26  
 27  
 28 <sup>95</sup> ECF No. 134-2 at 7. Marks makes much out of Konami’s statement during prosecution that the symbols remain “the same for all games.” But again, reading this language in the context of the entire history, it is clear that Konami was simply illustrating how the invention worked: in any given game, some of the reel is designated to contain non-identical symbols, some of the reel is designated to contain identical symbols, and the patent has a process for selecting those identical symbols. Konami never suggested that a crucial part of the invention was that the fixed, non-identical symbols were permanently unchangeable. Indeed, the examiner clarified that Konami’s invention was different than the prior art because it taught that the identical symbols were selected “anew for each game” while the non-identical symbols remain fixed. ECF No. 130-8.

1        In any event, “fixed” is a common word with which I and the jury will be familiar. As it is  
 2 used in the patents, the surrounding claim language will tell the jury everything it needs to know  
 3 about what the term means. Nor is there any indication that the patentee played the lexicographer  
 4 here and gave “fixed” a special meaning. The patent simply states that some symbols will be fixed  
 5 relative to other symbols. No construction is needed for this term.

6        **2.        *“Notional, non-visible inner reel” and “virtual rotation”***

7        Marks next asks that I construe “notional, non-visible reel” to mean a “virtually rotating reel  
 8 that rotates and comes to rest to select one of a subset of consecutive symbols to display to the user.”  
 9 Konami proposes that this term simply means a “random selection algorithm.” This notional reel  
 10 term refers to the process the invention uses to determine which symbol will populate the identical-  
 11 symbol portion of the simulated reels. My construction of “virtual rotation” hinges on what I  
 12 construe the inner reel to mean.

13        The parties’ real dispute is whether Konami’s patents broadly cover any sort of random-  
 14 number algorithm that one could use to select a symbol from a list, or instead are limited to a more  
 15 specific process for selecting the symbols.

16        I reject Konami’s construction because it is not supported by the patents’ language or the  
 17 intrinsic evidence. While prosecuting these patents, Konami told the examiner that its invention was  
 18 different from prior art, in part, because it does not use an everyday random-number generator, it  
 19 “selects the symbols . . . [with a] notional non-visible rotatable inner reel.”<sup>96</sup> The examiner  
 20 confirmed its understanding that Konami’s invention did not rely on a generic random-selection  
 21 method: “population of the identical symbols occurs by a process in which a notional, non-visible  
 22 inner reel virtually rotates.”<sup>97</sup>

23        The patents’ language confirms that the invention does not merely use a random-selection  
 24 algorithm. If the invention used a conventional random-number generator, the patentee could have  
 25 said so. Instead, the patentee chose its own term with no predefined meaning in the prior art, so I

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27        <sup>96</sup> ECF No. 130-8 at 561.

28        <sup>97</sup> ECF No. 130-8 at 455.

1 look to the specification for guidance. The specification says that the “inner reel” is “effect[ively]” a  
 2 “look-up” table, and the patents’ figures depict a look-up table, or list of symbols.<sup>98</sup> Konami  
 3 contends that this means the inner reel is simply a look-up table, or spreadsheet, coupled with a  
 4 random-selection generator to pick one of the symbols from the table. But that the patent says the  
 5 inner reel is “in effect” a look-up table, and not actually a look-up table, indicates that the patent uses  
 6 a different method from a simple random-number generator coupled with a table. The specification  
 7 further explains that the invention selects a symbol from this table by using a “simulated rotation and  
 8 ‘coming to rest’” of a virtual reel. The patent thus contemplates something different than a generic  
 9 random-number generator.<sup>99</sup> Indeed, the phrase “random number generator” does not appear in the  
 10 patents at all.

11 But Marks’s construction is not right either. It proposes that the inner reel is defined as a  
 12 “virtually rotating reel that rotates and comes to rest to select one of a subset of consecutive symbols  
 13 to display to the user.” The first problem with this construction is that it would make this term  
 14 redundant of other claim terms and adds more confusion than it relieves. For example, in the ’869  
 15 Patent’s first claim, the term appears this way: the “identical symbol is selected by virtually spinning  
 16 a notional, non-visible, inner reel comprising a subset of said plurality of symbols.” Inserting  
 17 Marks’s construction, the sentence would read: the “identical symbol is selected by virtually  
 18 spinning a virtually rotating reel that rotates and comes to rest to select one of a subset of consecutive  
 19 symbols to display to the user *comprising a subset of said plurality of symbols.*” Marks’s  
 20 construction is nonsensical in the context of the patents’ terms. It also implies limitations (such as  
 21 that the symbols have to be “consecutive”) despite that the claim terms do not support them.

22 Unable to agree with one of the parties’ constructions, I must provide one of my own.<sup>100</sup> The  
 23 word “notional” is not defined in the patents, and there is no evidence that it has a meaning in the art.

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 25 <sup>98</sup> ’540 Patent, 4:45–65.

26 <sup>99</sup> *Id.*

27 <sup>100</sup> *Honeywell Int’l Inc. v. Universal Avionics Sys. Corp.*, 488 F.3d 982, 990 (Fed. Cir. 2007)  
 28 (affirming the district court’s decision to look to the specification to define a term that was not a term of art).

1 The dictionary definition of “notional” is “having an abstract or speculative character, not based on  
 2 fact or empirical investigation, theoretical.”<sup>101</sup> In other words, that the reel is “notional” simply  
 3 means that the reel is theoretical and not a physical object. The “non-visible” language is used in the  
 4 patent to contrast the various “simulated reels” that are actually displayed to the player on a screen.  
 5 This inner reel is instead a program operating on a processor of some sort that the player never sees.

6 Further, the patent’s language and figures support the construction that the inner reel is  
 7 indeed a table of symbols as Konami argues, but a table arranged to simulate a theoretical reel. The  
 8 patents’ figures show a table of symbols arranged as a single-reel strip, and the specification says that  
 9 the inner reel is a “strip” of symbols.<sup>102</sup> The patent repeatedly refers to “spinning” the inner reel,  
 10 which indicates that the symbols in the inner reel are arrayed in some sort of order.<sup>103</sup> The  
 11 prosecution history also supports a construction of the “inner reel” table to be arranged as a  
 12 theoretical reel.<sup>104</sup> I thus construe “notional, non-visible inner reel” to mean “a table of symbols  
 13 arranged as a theoretical reel that is not displayed to the player.”

14 I must now construe the related term of “virtually spinning” this theoretical reel. Marks  
 15 proposes the construction “computerized representation of a spinning simulated reel.” Konami  
 16 proposes “executing the random selection generator.” Given my construction of the inner-reel term,  
 17 neither of the parties’ proposals makes sense.

18 In line with my construction of the reel itself as a table of symbols arranged as a theoretical  
 19 reel, I construe “virtually spinning” to mean “randomly selecting a symbol from.” The patents’ claim  
 20 language itself—the best evidence for construction—explains that the inner reel is used to  
 21 “randomly” select symbols, and that the “virtual spin” is how this random selection is carried out.<sup>105</sup>

22  
 23 <sup>101</sup> Webster’s Third New International Dictionary at 1545 (2002).

24 <sup>102</sup> ’540 Patent, Fig. 3; 3; 4:45–65.

25 <sup>103</sup> *Id.* at 8:25–35.

26 <sup>104</sup> ECF No. 134-2.

27 <sup>105</sup> “[S]aid identical symbol is randomly selected anew for each play of said game, wherein said  
 28 identical symbol is selected by virtually spinning a notional, non-visible, inner reel.” ’540 Patent,

1 So the whole sentence now reads: “randomly selecting a symbol from a table of symbols arranged as  
 2 a theoretical reel that is not displayed to the player.”<sup>106</sup>

3 **3. “Play of the game” and related terms<sup>107</sup>**

4 Marks proposes that I construe “play of the game” and related terms to mean “elapsed time  
 5 between user action commencing game and when all the reels are in a stop position [and an award if  
 6 any has issued to the player].” Konami contends that this term needs no construction.

7 The patents refer to “plays of the game” or “instance of the game” to distinguish between  
 8 different time periods when different identical symbols are populated into the identical-run sections  
 9 of the reels. For example, the ’540 Patent refers to one identical symbol being used for a “first play”  
 10 of a game, and then a second identical symbol used for “a second play” of the game.

11 Marks’s proposal seeks to limit the term “play of the game” to mean only user-commenced  
 12 games, not games initiated by the machine itself. But there is no support for reading this limitation  
 13 in. Marks fails to point to any language in the patents’ terms or specification that indicates a “play of  
 14 the game” or “instance of the game” must be initiated by the player. Instead, it relies on vague  
 15 expert testimony and the fact that the term is too uncertain.<sup>108</sup> But the patents make clear that a  
 16 “play” may be commenced as a result of a user action as the main game, or alternatively, as a feature  
 17 game, resulting from some triggering event in a main game.<sup>109</sup>

18 The parties otherwise present no real dispute over the scope of this term that would require a  
 19 construction. The jury and I are familiar with what “play,” “instance,” and “game” mean. As the  
 20 terms are used in the patents, the surrounding claim language will tell the jury everything it needs to  
 21 know. And there is no evidence that the patentee gave any of these terms a special meaning.

22 \_\_\_\_\_  
 23 8:30–35.

24 <sup>106</sup> Although there is little in the patent to define this term, Marks did not challenge whether it is  
 25 indefinite so I need not reach that issue here.

26 <sup>107</sup> This includes the terms: “instance of a game,” “play of the game,” and “play of said game.”

27 <sup>108</sup> ECF No. 130 at 25.

28 <sup>109</sup> ’869 Patent, 6:26-28.

1 Therefore, no construction is necessary for these terms.

2       4.     ***“Replace” and related terms<sup>110</sup>***

3       Marks proposes that I construe this group of terms to mean: “substituting one symbol for  
4 another at the same symbol containing element location / substituting one symbol for another at the  
5 same symbol position.” Konami believes no construction is needed.

6       The patents use the term “replace” when talking about the machine substituting new symbols  
7 into the identical-symbol sections of the simulated reels. For example, the ’540 Patent says that after  
8 one game with one identical symbol position on the reel displayed to the player, the identical symbol  
9 is “replaced” by a new symbol.<sup>111</sup>

10     Marks is again trying to read a limitation into the claim terms. This time, it is arguing that  
11 Konami’s invention requires that the number of positions designated for identical symbols on the  
12 simulated reel always remains the same. So, if the slot machine has a simulated reel with ten  
13 positions slated for identical-symbol runs, there will always be ten positions for identical-symbol  
14 runs, no more and no less. If Marks is right, then every time one identical symbol is replaced with  
15 another, it must do so at the same position on the simulated reel.

16     The patents’ terms and specification do not support this limitation. The claim language states  
17 simply that one symbol is “replaced” by another, it says nothing about whether that replacement must  
18 occur at the same “position” on the simulated reel.<sup>112</sup> The patents designate a section of the  
19 simulated reel for identical symbol groups, but there is no language requiring that those sections  
20 remain static from game to game.<sup>113</sup> Thus, for one game perhaps the fifth position of the reel is  
21 designated for identical symbols, but for the next game the fifth position is no longer part of that

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22  
23  
24     <sup>110</sup> These terms include “replaced by,” “replace,” “replacing,” “replacement symbol,” “replace each  
25 of the symbols,” and “replace the first identical symbol by the second identical symbol.”

26     <sup>111</sup> ’540 Patent, Cl. 1.

27     <sup>112</sup> *Id.*

28     <sup>113</sup> *Id.*

1 section.<sup>114</sup> Accordingly, symbols will not necessarily be replaced in the same positions.

2 The specification confirms that the positions designated for identical symbols can change,  
 3 and thus that a replacement need not always occur at the “same position.” For example, in one  
 4 preferred embodiment:

5 [T]he number of elements comprising a run of identical ‘inner reel’  
 6 symbols and the number of such runs in any given reel is not constant but  
 7 may be determined in a number of ways. Thus in at least one preferred  
 8 embodiment the number of elements comprising a run may be a function  
 of the amount of a bet placed by the player on the main game which  
 triggered the feature game, or as a function of accumulated throughput of  
 bets over a given time period.<sup>115</sup>

9 Another part of the specification explains that a reel can be modified to include the identical symbol  
 10 selected to populate another reel.<sup>116</sup>

11 There is thus no basis in the claim language or the specification for limiting the  
 12 “replacement” step in the way Marks suggests. As it is used in the patents, the surrounding claim  
 13 language will tell the jury everything it needs to know about what “replace” means. Thus, no  
 14 construction is needed for “replace” or its related terms.

15 **5. “Subset” and related terms<sup>117</sup>**

16 Marks proposes that I construe this term to mean: “a fewer than all group of a larger defined  
 17 group of symbols.” Konami believes no construction is needed.

18 The patents use “subset” to refer to the symbols in the inner reel’s table, which constitutes the  
 19 set of symbols that the machine can draw from when selecting identical symbols for the runs: a  
 20 “symbol is selected by virtually spinning a notional, non-visible, inner reel comprising *a subset of*  
 21 *said plurality of symbols.*”<sup>118</sup> The dictionary definition of “subset” is “a mathematical set each of

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22  
 23 <sup>114</sup> *Id.*

24 <sup>115</sup> ’869 Patent, 2:14-15, 4:49-52.

25 <sup>116</sup> ’869 Patent, 5:20-33.

26 <sup>117</sup> These terms include: “Subset,” “Subset of said plurality of symbols,” and “Subset of  
 27 Symbols.”

28 <sup>118</sup> ’540 Patent, Cl. 7.

1 whose elements is also an element of a given set.”<sup>119</sup> Thus, a subset can be all of the elements of the  
 2 greater set, or fewer—but a subset cannot have different symbols from the greater set. Marks asks  
 3 that I construe subset to mean that the inner reel’s symbols include less than, but not as many, of the  
 4 distinct types of symbols in the greater set.<sup>120</sup>

5 There is nothing in the claim language suggesting that “subset” must mean less than all of the  
 6 symbols in the greater set. The claims simply state that the reel has a “subset” of symbols from  
 7 another set—this new subset could be the same group of symbols or a smaller set. There is nothing  
 8 about how the invention works or how the claim terms are written that suggests that the subset  
 9 cannot be the same set of symbols in the greater set.<sup>121</sup> Nor is there any evidence in the prosecution  
 10 history suggesting that it mattered where the inner reel’s subset of symbols contained fewer than the  
 11 entire set of symbols.

12 Even if Marks were right that a subset here cannot contain each of the distinct symbols in the  
 13 greater set, its construction would still be too limiting. Nothing in the patent or other evidence  
 14 suggests that the greater set of symbols cannot have multiple copies of the same distinct symbol, say,  
 15 five joker symbols and three queen symbols. The subset could have only three joker symbols and  
 16 two queen symbols—it would then have fewer symbols than the greater set, but it would not  
 17 necessarily have fewer than all of the distinct symbols in the greater set, as Marks argues.

18 This is another example of Marks asking me to construe a term that will be easy for the jury  
 19 to understand in the context of the claim language, has no special meaning in the art or as defined by  
 20 the patentee, and for which there is no basis to read in an additional limitation. These sorts of  
 21 disputes are questions of infringement, not construction. I thus decline to offer a construction for  
 22 “subset.”

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26 <sup>119</sup> Webster’s Third New International Dictionary at 2279 (2002).

27 <sup>120</sup> ECF No. 130 at 30.

28 <sup>121</sup> The patents use the term “subset” to refer to the second set of symbols, nothing more.

1       6.       “*Symbol containing elements*” and related terms<sup>122</sup>

2           Marks proposes that I construe this term to mean: “position[s] within a predetermined data  
 3 structure representing a section of a virtual or simulated reel where data representing symbols may be  
 4 placed.” Konami believes no construction is needed.

5           This claim language refers to the areas on the slot machine’s simulated reels designated to  
 6 contain symbols (that will eventually display to the player). For example, the patents state that the  
 7 slot machine “display[s] a matrix of symbol containing elements having a plurality of rows and a  
 8 plurality of columns”—in other words, the slot machine displays reels on the screen that contain  
 9 various symbols.<sup>123</sup> The patents then distinguish between sections of these “symbol containing  
 10 elements” designated for the non-identical symbols, and sections of “symbol containing elements”  
 11 designated for the identical symbols.<sup>124</sup> Stated differently, the reels have sections with positions  
 12 designated for different symbols, and sections with positions designated for identical symbols.

13           Marks seeks to limit this term to mean a position on the simulated reel that is  
 14 “predetermined” in a “data structure.”<sup>125</sup> But there is no basis in the claim language or other  
 15 evidence to read in a limitation that the positions on the reels are predefined in a permanent data  
 16 structure. Nothing in the claim language suggests that the elements or positions must be permanently  
 17 set in a data structure. One plausible embodiment of the invention could change positions from  
 18 game to game using a random-selection algorithm, for example—in which case the symbol  
 19 containing element would not necessarily be part of a “predetermined data structure.” One  
 20 embodiment of the invention discussed in the specification suggests that the symbol positions in the  
 21 data structure can be altered—such as if the positions for the identical symbols change.<sup>126</sup>

22  
 23           <sup>122</sup> This includes: “Symbol containing elements” and “Symbol positions.”

24           <sup>123</sup> ’869 Patent, Cl. 1.

25           <sup>124</sup> *Id.*

26           <sup>125</sup> ECF No. 130 at 32–33.

27  
 28           <sup>126</sup> Another problem with Marks’s proposal is that the patents refer to the symbol-containing  
 elements both when discussing the symbols displayed on the screen in a matrix, *see, e.g.* ’540 Patent,

1 The patents' claim language makes clear what these terms mean: a position on the reel that is  
2 populated with a symbol. I therefore decline to offer a construction.

## Conclusion

4           Accordingly, IT IS HEREBY ORDERED, ADJUDGED, AND DECREED that I adopt the  
5 above constructions.

6 IT IS FURTHER ORDERED that this case is referred to the magistrate judge to schedule the  
7 mandatory settlement conference required by LPR 1-19(b).

8 Dated July 25, 2017.

Jennifer A. Dorsey  
United States District Judge

Cl. 21, and when discussing replacing symbols in the theoretical reel of symbols, *id.*